

## PATENT COOPERATION TREATY

PCT

## NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Commissioner  
US Department of Commerce  
United States Patent and Trademark  
Office, PCT  
2011 South Clark Place Room  
CP2/5C24  
Arlington, VA 22202  
ETATS-UNIS D'AMERIQUE  
in its capacity as elected Office

Date of mailing (day/month/year) 11 April 2001 (11.04.01)	
International application No. PCT/SG00/00114	Applicant's or agent's file reference FP1267
International filing date (day/month/year) 07 August 2000 (07.08.00)	Priority date (day/month/year) 10 August 1999 (10.08.99)
Applicant YAU, Wei, Yun et al	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:

27 February 2001 (27.02.01)

☐ in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was  
☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer Olivia TEFY Telephone No.: (41-22) 338.83.38
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# INTERNATIONAL SEARCH REPORT

International Application No.  
PCT/SG 00/00114

## CLASSIFICATION OF SUBJECT MATTER

IPC<sup>7</sup>: G06K 9/00; A61B 5/103

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC<sup>7</sup>: G06K; G06F A61B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPODOC

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 929028 A (THOMSON) 14 July 1999 (14.07.99) claims 1-3,4,7,9,29; fig.1,2,3,4.	1-4
A		5-11
A	US 5644636 A (XTEC) 11 July 1996 (11.07.96) abstract.	1-3
X	EP 566337 A (ENIX) 28 March 1995 (28.03.95) abstract; fig. 1-4, 10.	1-4
A		5-11
A	WO 87/06378 A (IMAGEPACK) 29 June 1988 (29.06.88) abstract; fig.1.	1-3
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☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

\* Special categories of cited documents:

„A“ document defining the general state of the art which is not considered to be of particular relevance

„E“ earlier application or patent but published on or after the international filing date

„L“ document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

„O“ document referring to an oral disclosure, use, exhibition or other means

„P“ document published prior to the international filing date but later than the priority date claimed

„T“ later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

„X“ document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

„Y“ document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

„&“ document member of the same patent family

Date of the actual completion of the international search

7 November 2000 (07.11.2000)

Date of mailing of the international search report

24 November 2000 (24.11.2000)

Name and mailing address of the ISA/AT

Austrian Patent Office

Kohlmarkt 8-10; A-1014 Vienna

Facsimile No. 1/53424/535

Authorized officer

Mihatsek

Telephone No. 1/53424/329

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/SG 00/00114

Patent document cited in search report			Publication date	Patent family member(s)		Publication date
EP	A2	566337	20-10-1993	DE	C0 69306153	09-01-1997
EP	A3	566337	08-06-1994	DE	T2 69306153	20-03-1997
EP	B1	566337	27-11-1996	JP	A2 6288846	18-10-1994
				JP	B4 7058235	21-06-1995
				US	A 5400662	28-03-1995
				US	A 5429006	04-07-1995
				DE	C0 69308060	27-03-1997
				DE	T2 69308060	28-05-1997
				EP	A2 566336	20-10-1993
				EP	A3 566336	08-06-1994
				EP	B1 566336	12-02-1997
				JP	A2 6288845	18-10-1994
				JP	B4 7058234	21-06-1995
EP	A2	929028	14-07-1999	JP	A2 11288354	19-10-1999
EP	A3	929028	25-10-2000			
US	A	5644636	01-07-1997	AU	A1 47446/96	24-07-1996
				AU	B2 691729	21-05-1998
				CA	AA 2238309	11-07-1996
				EP	A1 800732	15-10-1997
				EP	A4 800732	26-05-1999
				JP	T2 10512072	17-11-1998
				WO	A1 9621297	11-07-1996
WO	A	8706378A		none		

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## PATENT COOPERATION TREATY

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## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference FP1267	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/SG 00/00114	International filing date (day/month/year) 7 August 2000 (07.08.2000)	Priority Date (day/month/year) 10 August 1999 (10.08.1999)
International Patent Classification (IPC) or national classification and IPC  IPC <sup>7</sup> : G06K 9/00; A61B 5/103		
Applicant NANYANG TECHNOLOGICAL UNIVERSITY		

<p>1. This international preliminary examination report has been prepared by this International Preliminary Examination Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>4</u> sheets, including this cover sheet.</p> <p><input type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of _____ sheets.</p>	
<p>3. This report contains indications relating to the following items:</p> <p>I. <input checked="" type="checkbox"/> Basis of the opinion</p> <p>II. <input type="checkbox"/> Priority</p> <p>III. <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p>IV. <input type="checkbox"/> Lack of unity of invention</p> <p>V. <input checked="" type="checkbox"/> Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability: citations and explanations supporting such statement</p> <p>VI. <input type="checkbox"/> Certain documents cited</p> <p>VII. <input type="checkbox"/> Certain defects in the international application</p> <p>VIII. <input type="checkbox"/> Certain observations on the international application</p>	

Date of submission of the demand  27.02.2001	Date of completion of this report  7 December 2001 (07.12.2001)
Name and mailing address of the IPEA/AT Austrian Patent Office Kohlmarkt 8-10 A-1014 Vienna Facsimile No. 1/53424/200	Authorized officer  MIHATSEK  Telephone No. 1/53424/329

Form PCT/IPEA/409 (cover sheet) (July 1998)

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/SG 00/00114

**I. Basis of the report****1. With regard to the elements of the international application:\***☒ the international application as originally filed☐ the description:

pages \_\_\_\_\_, as originally filed

pages \_\_\_\_\_, filed with the demand

pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_.

☐ the claims:

pages \_\_\_\_\_, as originally filed

pages \_\_\_\_\_, as amended (together with any statement) under Article 19

pages \_\_\_\_\_, filed with the demand

pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_.

☐ the drawings:

pages \_\_\_\_\_, as originally filed

pages \_\_\_\_\_, filed with the demand

pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_.

☐ the sequence listing part of the description:

pages \_\_\_\_\_, as originally filed

pages \_\_\_\_\_, filed with the demand

pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_.

**2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.**

These elements were available or furnished to this Authority in the following language \_\_\_\_\_ which is:

☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).☐ the language of publication of the international application (under Rule 48.3(b)).☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).**3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:**☐ contained in the international application in printed form.☐ filed together with the international application in computer readable form.☐ furnished subsequently to this Authority in written form.☐ furnished subsequently to this Authority in computer readable form.☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.**4. ☐ The amendments have resulted in the cancellation of:**☐ the description, pages \_\_\_\_\_.☐ the claims, Nos. \_\_\_\_\_.☐ the drawings, sheets/fig \_\_\_\_\_.**5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\***

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.  
PCT/SG 00/00114**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

<b>I. Statement</b>			
Novelty (N)	Claims	1-13	YES
	Claims		NO
Inventive step (IS)	Claims	1-13	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-13	YES
	Claims		NO

## Citations and explanations (Rule 70.7)

The following documents are cited in the Search Report:

D1: EP 0929028 A  
D2: US 5644636 A  
D3: EP 0566337 A  
D4: WO 87/06378 A

Explanations: The present invention relates to a fingerprint sensing apparatus which includes a number of packaged semiconductor devices, each packaged semiconductor device comprising a single fingerprint sensor die. Each die includes a sensing array surface. The devices are arranged so that the sensing array surface of the devices define an apparatus sensing surface.

The document EP 0929028 cited relates to a method and system for providing user input to a computer, or the like, having a display by detecting a change in fingerprint pattern of a user. The system controls the position of a pointer on a display by detecting motion of ridges and pores of a fingerprint of a user and moving the pointer on the display according to detected motion of the ridges and pores of the fingerprint. The system captures successive images of the fingerprint ridges and pores and detects motion of the ridges and pores based upon the captured successive images.

The document EP 0566337 cited relates to a semiconductor matrix type surface pressure detecting element and more particularly to means for reading small-surface pressure distributions, such as result from the ridges and valleys of a fingerprint pattern.

With regard to the applicant's convincing arguments the Examiner now agrees with the applicant. The essential features of the invention—that the fingerprint sensing apparatus to be provided in which the total surface area of the apparatus sensing surface is many times greater than the sensing surface of a single semiconductor die (or chip)—are not anticipated by the cited documents because they relate merely to the state of the art. There is also no expectation of success from a combination of the features of the most relevant citations (EP929028 and EP566337) to achieve the task presented.

Thus the present invention is regarded to be novel and inventive.

**INTERNATIONAL PRELIMINARY EXAMINATION REPORT**

International application No.  
PCT/SG 00/00114

**Supplemental Box**

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: **Box V (page 1)**

Industrial applicability is given for all claims.